

REMARKS

Claims 1 to 13 are now pending in the application, with claim 1 being the only independent claim. Reconsideration and further examination are respectfully requested.

In the Office Action, objection was made to the title of the invention as not being descriptive. In response, Applicants have amended the title of the invention above to more accurately describe the present invention. Accordingly, withdrawal of this objection is respectfully requested.

Also, objection was made to the Specification for omitting certain headings, cross-references to applications, and an Abstract. In response, the above amendments have added those items to the Specification. Accordingly, withdrawal of this objection is respectfully requested.

Claim 1 was rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness. In response, Applicants have amended claim 1 above to delete the words, "or the like". Accordingly, withdrawal of this rejection is respectfully requested.

Claims 1, 4 and 7-10 were rejected under 35 U.S.C. § 102(b) over U.S. Patent 5,729,207 (Yamano); claims 2, 3, 5 and 6 were rejected under § 103(a) over Yamano in view of U.S. Patent 5,440,293 (Tice); and claim 11 was rejected under § 103(a) over Yamano in view of U.S. Patent 6,078,269 (Markwell). Withdrawal of these rejections is respectfully requested for the following reasons.

The present invention concerns an alarm that has detection means for detecting heat, radiation and/or pollutants, with such detection means being contained within a removable cartridge. As a result of this feature of the invention, the detection circuitry of an alarm according to the present invention typically can be removed and replaced as a unit with relatively little effort.

Thus, independent claim 1 is directed to an alarm for detecting heat, radiation and/or pollutants. The alarm includes housing means and also includes detection means for detecting the heat, radiation and/or pollutants. The detection means, in turn, includes detection circuitry and a power source, and is contained within a cartridge that is mountable within the housing means and removable therefrom.

The foregoing combination of features is not disclosed or suggested by the applied art. In particular, Yamano does not disclose or suggest at least the feature of a detection means for detecting heat, radiation and/or pollutants, where the detection means includes both detection circuitry and a power source and is mountable within and removable from a housing means.

In this regard, Yamano is directed to a corrosive gas detecting sensor that has a removable cartridge. However, Yamano's cartridge is only described as including a sensor element and an EEPROM. See Yamano, column 3, lines 40-41. Nothing in Yamano indicates that his cartridge includes detection circuitry or other detection means for detecting heat, radiation and/or pollution.

To the contrary, Yamano describes the sensor element 3 as a conventional sensor element formed as a quartz-crystal center portion having a chrome film, gold film and a metal such as zinc or zinc compound deposited thereon (see column 1, lines 26-43). Also, column 4, lines 26-29, of Yamano indicates that the microcontroller 18 and other circuitry are located within Yamano's sensor body.

Clearly, such a sensor element in combination with an EEPROM could not possibly have detected heat, radiation and/or pollution without additional circuitry. As noted above, that additional circuitry is located within Yamano's sensor body rather than in his removable cartridge. Moreover, there is no indication whatsoever in Yamano that his sensor element 3 and EEPROM 5 alone would have had such capability. While such elements no doubt are used in connection with the remainder of Yamano's circuitry for the purpose of detecting corrosive gas, this is significantly different than including the entire detection means for detecting heat, radiation and/or pollution within a removable cartridge.

By including the detection circuitry within a removable cartridge, the present invention provides the advantage that most problems that might arise with the alarm can be corrected simply by replacing the removable cartridge. On the other hand, in Yamano's apparatus only a limited number of problems can be resolved by replacing the cartridge. For example, if there exists a problem with the detection circuitry, as opposed to the sensor element, the problem would be resolved by replacing the

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removable cartridge in an apparatus according to the present invention, but not in an apparatus described by Yamano.

Yamano provides no suggestion to include such detection means or circuitry within his removable cartridge, and both Tice and Markwell have been reviewed but are not seen to make up for this deficiency. In fact, the Office Action has not even alleged that they do.

In addition, Yamano and the other applied art fail to disclose a cartridge as recited in claim 1 that is mountable within a housing means. Instead, Yamano merely discloses that his cartridge is connected to his sensor body 11.

Accordingly, independent claim 1 is believed to be allowable over the applied art. The other claims in the application depend from independent claim 1 discussed above, and are therefore believed to be allowable for at least the same reasons. In addition, each such dependent claim recites an additional feature of the invention which further distinguishes the invention from the applied art. Accordingly, the individual consideration/reconsideration on each on its own merits is respectfully requested, particularly in view of the above remarks.

For example, dependent claim 10 recites the further feature that the alarm includes control means responsive to the energizing and de-energizing of an external power supply a preset number of times over a preset time period to apply a preset signal to the alarm, thereby to reset the alarm in the event of an accidental triggering thereof. In the Office Action, column 4, lines 38-54, are cited as showing the provision

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of a reset signal to an alarm. However, that portion of Yamano has been reviewed in detail and is only seen to discuss the provision of a reset signal when a power source voltage drops below a threshold value. Nothing in this portion of Yamano is seen to say anything at all about the resetting feature of the invention recited in dependent claim 10. For this additional reason, claim 10 is believed to be allowable over the applied art.

Similarly, dependent claim 11 recites the additional feature that the alarm includes control means responsive to the energizing and de-energizing of an external power supply a preset number of times over a preset time period to apply a test signal to the alarm, thereby to test the alarm. The Office Action cites Figure 1 and column 3, lines 50-59, of Markwell as showing a battery-powered, RF-interconnected detector sensor system that functions to test an alarm. However, Markwell does not disclose the specific testing feature recited in dependent claim 11, and the Office Action has not even alleged that it does. For this additional reason, claim 11 is believed to be allowable over the applied art.

Newly added claim 12 depends from independent claim 1 and recites the additional feature that the detection means also includes an alarm sounder. By virtue of this feature, any problem with the alarm sounder of an alarm according to this aspect of the invention can be resolved relatively easily by removing and/or replacing the cartridge. The applied art has been reviewed in detail, and is not seen to disclose or to

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suggest this feature of the invention. For this additional reason, claim 12 is believed to be allowable over the applied art.

Claim 13 also depends from independent claim 1 and recites the additional feature that the detection means is fully self-contained and can operate as an alarm independently of the housing means. As a result of this feature of the invention, almost any problem with the alarm be resolved relatively easily by removing and/or replacing the cartridge. In addition, the cartridge can be used both as a stationary alarm when inserted into the housing and as a portable alarm when removed from the housing. The applied art is not seen to disclose or to suggest this feature of the invention. For this additional reason, claim 13 is believed to be allowable over the applied art.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and an indication to that effect is respectfully requested.

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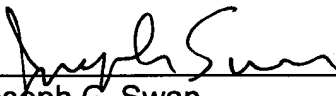
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Respectfully submitted,

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APPENDIX A

Claims Marked to Indicate Changes

1. (Amended) An alarm for detecting heat, radiation and/or pollutants [such as smoke, carbon monoxide or the like having], said alarm comprising:

housing means [(12,20)]; and

detection [circuitry] means for detecting said heat, radiation and/or pollutants, said detection means including detection circuitry and a power source;

wherein said detection [circuitry] means is contained within a cartridge [(4)] which is mountable [in] within said housing means and [detachable] removable therefrom.

2. (Amended) An alarm according to claim 1 wherein said housing means comprises an upper housing member [(12)] and a base[(20)], the upper housing member [(12)] and the base [(20)] being adapted to be fitted together.

3. (Amended) An alarm according to claim 2 wherein the base comprises support means [(22)] and carrier means [(24)] slidably mounted on the support means, the carrier means [(24)] being for seating the cartridge [(40)] thereon for insertion into the housing means[(12,20)].

4. (Twice Amended) An alarm according to claim 1 wherein the housing means [(12,20)] includes first electrical connection means [(52)] connectable to an external power supply and the cartridge [(40)] includes second electrical connection means [(41)] engageable with said first connection means for electrically connecting said cartridge [(40)] to said power supply thereby to allow said detection means to be powered by said external power supply.

5. (Amended) An alarm according to claim 4 wherein the housing means [(12,20)] further includes cover means [(58)] movable between first and second positions wherein:

in said first position said cover means restricts physical access to the first connection means and in said second position said cover means allows engagement of said first and second connection means.

6. (Amended) An alarm according to claim 5 wherein said cover means [(58)] is movable between said first and second positions in response to insertion and removal of said cartridge [(40)] into and from said housing means [(12,20)].

7. (Twice Amended) An alarm according to claim 1 wherein the cartridge [(40)] is provided with a plurality of apertures [(46)] to allow the passage of said radiation and/or pollutants into the cartridge for detection by said detection means.

8. (Amended) An alarm according to claim 7 wherein the cartridge [(40)] is provided with closure means for closing said apertures, said closing means being means movable between first and second positions wherein:

in said first position said closures means closes said apertures and in said second position said closure means opens said apertures.

9. (Amended) An alarm according to claim 8 wherein said closure means is movable between said first and second positions in response to insertion and removal of said cartridge [(40)] into and from said housing means.

10. (Twice Amended) An alarm according to claim 1 having control means responsive to the [energising] energizing and de-[energising]energizing of [the] an external power supply a preset number of times over a preset time period to apply a reset signal to the alarm, thereby to reset the alarm in the event of an accidental triggering thereof.

11. (Twice Amended) An alarm according to claim 1 and having control means responsive to the [energising] energizing and de-[energising] energizing of [the] an external power supply a preset number of times over a preset time period to apply a test signal to the alarm, thereby to test the alarm.